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Sent: Tuesday, September 30, 2014 7:13 AM
To: Dellinger, Philip; Lawrence, Rob
Subject: EARTHQUAKES: EPA, researchers and trade groups all push for changes in Texas regulations

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Published: Tuesday, September 30, 2014

Federal agencies, university researchers and the energy industry want Texas regulators to revise a proposed rule intended to deal with earthquakes linked to shale drilling activities.

While the groups generally praise the Texas Railroad Commission proposal as a good first step, the independent scientists say in written comments that the agency should collect more data. The oil and gas associations say the commission should simplify parts of the proposal.

The rule is intended to give the commission, which regulates oil and gas production, the authority to modify permits for the injection wells used to dispose of oil field waste and shut them down if necessary. Operators would have to check U.S. Geological Survey records and determine whether any earthquakes had occurred within a specific area around a proposed well before obtaining a permit ([EnergyWire](#), Aug. 13).

However, USGS says in its written [remarks](#) that its data aren't accurate enough for the Railroad Commission's purposes, because it has fewer seismic stations in Texas than in other areas of the country. Researchers from Southern Methodist University and U.S. EPA's Region 6 office in Dallas made similar comments.

"It's no criticism of the USGS. If you use stations that are a long way from the earthquakes when a sequence starts, there's an error associated with those locations," said Brian Stump, a professor at SMU who has been studying a string of earthquakes near Azle, Texas.

USGS initially plotted the Azle quakes' positions over an area 20 kilometers (12 miles) wide. When Stump and other scientists from SMU measured the earthquakes with more sophisticated equipment, they determined the epicenters of the quakes were within 1 kilometer of one another.

The SMU team and EPA's regional staff -- along with a group of oil and gas trade associations -- also suggested changing the commission's proposal for determining the area where operators would have to conduct the seismic survey. The commission said the zone would be determined by calculating the area where underground pressure is expected to increase by 5 pounds per square inch within 10 years of the injection well's operation.

However, there are several factors that could cause those pressure calculations to vary, such as the permeability of the underground rock formation and the presence of other injection wells in the area, the SMU team wrote.

EPA and the energy trade associations suggested setting a predetermined radius. EPA suggested 10 miles. The trade associations suggested a radius of about 3.5 miles for large injection wells and suggested getting rid of the requirement for shallow, low-volume injection wells.

The Azle earthquakes were the catalyst for the Railroad Commission's rules. More than 30 small quakes that were large enough to be felt struck the area in a few months, and smaller quakes have continued since January.

Azle sits over the Barnett Shale natural gas formation, where companies have been using horizontal drilling and hydraulic fracturing, or fracking, for a decade. While fracking hasn't been linked to most induced earthquakes, it creates large amounts of wastewater that have to be disposed of. Azle, about 20 miles northwest of Fort Worth, has three injection wells nearby.

Hundreds of angry residents asked the Railroad Commission to shut down injection wells in the area, pointing to previous scientific studies showing a link between injection and earthquakes in Texas, Arkansas, Ohio and Colorado.

The Railroad Commission, while still questioning the link between injection and earthquakes, hired a seismologist in March and proposed the rules in August.

The comment period for the proposed rules ended yesterday, and the Railroad Commission may adopt a final version by the end of the year, Ramona Nye, a commission spokeswoman, wrote in an email.

The process has led to a rare show of unity in the Texas energy world. The Railroad Commission and the energy trade associations have feuded with EPA over greenhouse gas regulations and the proper role of the federal government in oil and gas regulations. EPA has accused the Railroad Commission of mishandling complaints about water pollution.

EPA's regional water protection staff met with Railroad Commission Executive Director Milton Rister and Oil and Gas Division Director Gil Bujano in August. The regional staff members said they "applauded" the Railroad Commission's effort, according to EPA's comment letter.

Rister said in an interview with *The Texas Tribune* that the agencies have a friendlier relationship than is sometimes portrayed in the media.